

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents  
United States Patent and Trademark  
Office  
Box PCT  
Washington, D.C. 20231  
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 13 September 1999 (13.09.99)	
International application No. PCT/US99/03513	Applicant's or agent's file reference RCA 88914
International filing date (day/month/year) 18 February 1999 (18.02.99)	Priority date (day/month/year) 20 February 1998 (20.02.98)
Applicant OZKAN, Mehmet, Kemal et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

11 August 1999 (11.08.99)

☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer F. Baechler Telephone No.: (41-22) 338.83.38
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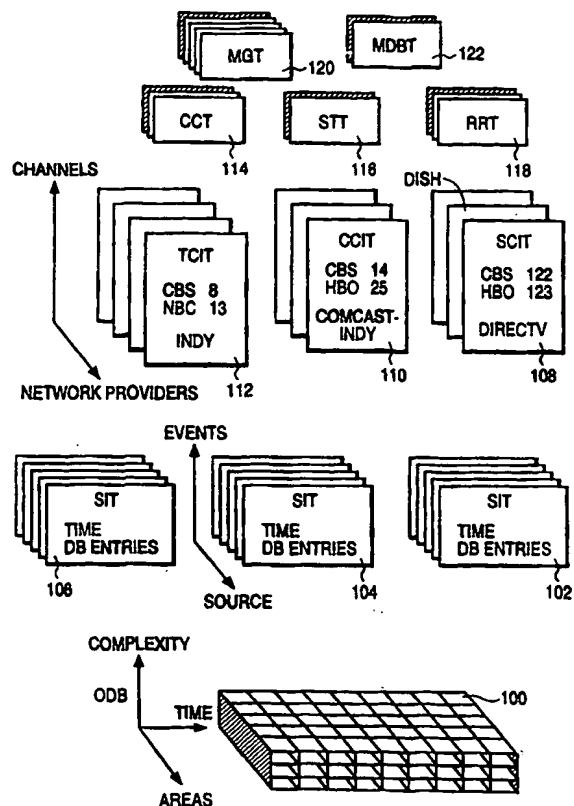
## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>6</sup> :</b> <b>H04N 7/16</b>	<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 99/43160</b> <b>(43) International Publication Date:</b> 26 August 1999 (26.08.99)
<b>(21) International Application Number:</b> PCT/US99/03513 <b>(22) International Filing Date:</b> 18 February 1999 (18.02.99) <b>(30) Priority Data:</b> 60/075,412      20 February 1998 (20.02.98)      US <b>(71) Applicant (for all designated States except US):</b> THOMSON CONSUMER ELECTRONICS, INC. [US/US]; 10330 North Meridian Street, Indianapolis, IN 46290 (US). <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> OZKAN, Mehmet, Kemal [TR/TR]; Savasci Sok. Bozokatt 19/1, Avcilar, 34840 Istanbul (TR). TENG, Chia-Yuan [-/US]; 7384 Celata Lane, San Diego, CA 92129 (US). HEREDIA, Edwin, Arturo [BO/US]; Apartment 4015, 8274 Lakeshore Circle, Indianapolis, IN 46250 (US). <b>(74) Agents:</b> TRIPOLI, Joseph, S. et al.; Thomson Multimedia Licensing Incorporated, P.O. Box 5312, Princeton, NJ 08540 (US).		<b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i>

**(54) Title:** A MULTIMEDIA SYSTEM FOR ADAPTIVELY FORMING AND PROCESSING EXPANSIVE PROGRAM GUIDES

**(57) Abstract**

A program guide information data structure and processing system for processing large quantities of guide information facilitates achieving a desirable compromise between transmission bandwidth and decoder complexity. A decoder acquires data for collating program guide information including objects by both area (e.g. a geographic, broadcast, or network market area), and by scheduled time of broadcast. The decoder collates the program guide information using the collation data which comprises channel and program map information for associating the program guide information with particular areas and broadcast times. The decoder collates the program guide information to provide a program guide selected from at least two available program guides associated with different areas in response to a User selection input. The collated program guide information is processed for display.



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DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

To:

TRIPOLI, J.  
THOMSON MULTIMEDIA LICENSING INC.  
P.O. Box 5312  
Princeton, New Jersey 08540  
ETATS-UNIS D'AMERIQUE

NOTIFICATION OF TRANSMITTAL OF  
INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing  
(day/month/year)

13. 06. 00

Applicant's or agent's file reference

RCA 88914

## IMPORTANT NOTIFICATION

International application No.

PCT/US 99/03513

International filing date (day/month/year)

18/02/1999

Priority date (day/month/year)

20/02/1998

Applicant

THOMSON LICENSING S.A. et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/



European Patent Office  
D-80298 Munich  
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Authorized officer

*J. Emekson*  
*2399-2132*



## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>RCA 88914</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/US 99/ 03513</b>	International filing date (day/month/year) <b>18/02/1999</b>	Priority date (day/month/year) <b>20/02/1998</b>
International Patent Classification (IPC) or national classification and IPC <b>H04N7/16</b>		
Applicant <b>THOMSON LICENSING S.A. et al.</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consists of a total of 7 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand <b>11/08/1999</b>	Date of completion of this report <b>13. 06. 00</b>
Name and mailing address of the IPEA/  European Patent Office D-80298 Munich Tel. (+ 49-89) 2399-0, Tx: 523656 epmu d Fax: (+ 49-89) 2399-4465	Authorized officer <i>J. Emberson</i> 

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/US99/03513

**I. Basis of the report**

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

**Description, pages:**

1-23 as originally filed

**Claims, No.:**

1-32 as received on 21/02/2000 with letter of 18/02/2000

**Drawings, sheets:**

1/11-11/11 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/US99/03513

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes:	Claims	3,4,7-12,14-30,32
	No:	Claims	1,2,5,6,13,31
Inventive step (IS)	Yes:	Claims	
	No:	Claims	3,4,7-12,14-30,32
Industrial applicability (IA)	Yes:	Claims	1-32
	No:	Claims	

**2. Citations and explanations**

**see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

**see separate sheet**

**To section V:**

With regard to claim 1 the document WO-A-96 41471 (hereinafter referred to as D1) discloses a system for generating a program guide only containing schedule information corresponding to the viewer's own service environment. The system includes (see figure 2 and corresponding portions of the description on pages 5 and 6) a processor for acquiring program guide and ancillary information (although not explicitly mentioned it is evident that such a processor is present in the set top box 52), a data collator for collating program guide information using the ancillary information (this is evident from page 6, first paragraph) and a display processor (see page 5, line 2) for processing the program guide information for display. The ancillary information of the program guide data include data for collating services by area (group addresses, see page 6, first paragraph) and data for collating program guide information by scheduled time of broadcast (this is an inherent feature of any program guide when the programs of different channels are displayed over a time axis). Hence all features of claim 1 can be identified in D1.

Feature (a) of claim 1 states that the channel mapping information enables a user to select between different groups of broadcast services collated by area. This feature is merely a characteristic of the received ancillary information. With regard to the claimed decoding apparatus this information states nothing else than that the apparatus is capable of processing information. It is nowhere mentioned in the claim that the decoding apparatus itself is adapted so that a selection of program guide information can be made by a user. Therefore, no difference in substance can be seen between the claimed subject-matter and the disclosure of D1. Therefore, the fact that D1 the selection is made a priori by sending a set of group numbers corresponding to all relevant groups to each customer is irrelevant for the question of novelty.

Claim 31 corresponds to claim 1 in terms of a method. Therefore, the above objections against claim 1 also hold for claim 31 for the same reasons.

Claim 32 differs from claim 31 in that program guide information is collated in response to a user selection input and selected from at least two available program guides associated with different areas. In D1 there is a slightly different approach in that all program guide information available nationwide is sent to all set-top boxes (or to a cable headend, see page 7, last paragraph) where the relevant information is filtered.



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/US99/03513

Hence a set-top box receives program guide information associated with different areas. At this point no difference can be recognized between "at least two available program guides associated with different areas" and "program schedule data in the national feed" (D1, page 6, lines 7-8) which inherently includes the information of all program guides relevant for the covered areas. Selection in response to a user selection input is a common measure which does not add anything inventive.

Claim 18 is directed to a method for forming suitable program guide information. Since the receiving part is already known from D1 a skilled person, being aware that encoding and decoding of a signal are mutually reverse operations would inevitably take care that the necessary auxiliary data (in D1: group information) are incorporated in the program guide information. The fact that they are in the form of packetized data is common art and does not add anything inventive.

The additional features of claims 2, 5, 6, 13, 19, 21 and 22 are also known from D1, see passages cited above. The additional features of claims 3, 4, 7-12, 14-17, 20 and 22-30 are generally known in the art or relate to minor design details which do not exceed the normal competence of a skilled person.

There is no objection concerning industrial applicability (Article 33(4) PCT).

**To section VII:**

Reference signs in parentheses should have been inserted in the claims to increase their intelligibility, Rule 6.2(b) PCT. This applies to both the preamble and characterising portion.

To meet the requirements of Rule 5.1(a)(ii) PCT, the document D1 mentioned above should have been identified in the description and the relevant background art disclosed therein should have been briefly discussed.

CLAIMS

1. Apparatus for decoding packetized program information from a first source to provide a program guide, comprising:

a processor for acquiring ancillary and program guide information in said packetized program information, said ancillary information including,

(a) channel mapping information enabling a user of said decoding apparatus to select between different groups of broadcast services collated by area, and

(b) data for collating program guide information associated with said broadcast services by scheduled time of broadcast, and

a data collator for collating said program guide information associated with said broadcast services using said ancillary information; and

a display processor for processing said collated program guide information for display.

2. Apparatus according to claim 1, wherein

said area comprises at least one of (a) a geographic area, (b) an area served by a satellite, terrestrial, or cable broadcaster, and (c) a market area of a service provider.

3. Apparatus according to claim 1, wherein

said channel mapping information comprises at least one of (a) a channel information map associating particular broadcast channels with particular areas, and (b) a service information map associating particular services with particular areas.

4. Apparatus according to claim 3, wherein said services comprise at least two of

(a) video channels, (b) audio channels, (c) Internet service, (d) phone or fax service, (e) Wide Area Network service.

5. Apparatus according to claim 1, wherein

said channel mapping information associates particular broadcast channels with a region identification designation.

AMENDED SHEET

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6. Apparatus according to claim 5, wherein

said region identification designation comprises at least one of (a) a zip code, (b) a telephone area code, and (c) another region identification code, and

said data collator collates program guide information by comparing said region identification designation with a pre-stored region identification designation of said apparatus.

7. Apparatus according to claim 1, wherein

said ancillary information includes objects associated with said program guide information and includes information partitioned into tables, and

said processor acquires data for collating said tables and objects by area.

8. Apparatus according to claim 7, wherein

said data for collating said tables and objects includes region identification designations for associating objects with regions that are different to table regions, and

said data collator collates said objects into regions different to regions of said tables.

9. Apparatus according to claim 7, wherein

said object comprises at least one of (a) a video segment, (b) an audio segment, (c) text, (d) an icon representing a user selectable item for display, (e) an HTML or SGML document (f) a menu of selectable items, (g) an image window for presentation within an encompassing image, and (h) an image window for initiating a multimedia function.

10. Apparatus according to claim 1, wherein

said ancillary information further includes acquisition information for use in acquiring said ancillary information from a second source different to said first source, and

said acquisition information includes one of (a) an Internet URL, (b) an Internet IP address, (c) an Email address, and (d) a telephone/fax/videophone number.

**AMENDED SHEET**

11. Apparatus according to claim 1, wherein  
said channel mapping information is formed in accordance with MPEG protocol and uses at least one data field selected from, (a) a table\_id\_extension field, (b) a carouselId field, and (c) a User defined private data field.

12. Apparatus according to claim 1, wherein  
said data collator collates said program guide information in response to a User selection input to provide a program guide selected from at least two available program guides associated with different areas.

13. Apparatus according to claim 1, wherein  
said ancillary information is partitioned by area at the transport protocol level enabling filtering of said ancillary information by area prior to post-transport processing.

14. Apparatus according to claim 1, wherein  
said ancillary information is partitioned by area enabling different ancillary information elements to be targeted for decoding in corresponding different areas.

15. Apparatus for decoding packetized program information from a first source to provide a program guide, comprising:

a processor for acquiring ancillary and program guide information in said packetized program information, said ancillary information including,

(a) channel mapping information enabling a user of said decoding apparatus to select between different groups of broadcast services collated by area, and

(b) data for collating program guide information associated with said broadcast services by scheduled time of broadcast, and

a data collator for collating program guide information in response to a User selection input to provide a program guide selected from at least two available program guides associated with different areas; and

a display processor for processing said collated program guide information for display.

16. A storage medium containing digital data representing video information comprising:

packetized program information representing a video program; and

ancillary information including ancillary and program guide information in said packetized program information, said ancillary information including,

(a) channel mapping information suitable for enabling a user of a reproduction device for playing said digital data to be able select between different groups of broadcast services and associated tables and objects collated by area, and

(b) data for collating program guide information associated with said broadcast services, and

information for associating said tables and objects with program guide information items associated with said broadcast services.

17. Apparatus according to claim 16, wherein

said channel mapping information includes a program information map linking said objects with program guide information items associated with programs broadcast on particular broadcast channels.

18. A method for forming program guide information to be suitable for processing in a decoder to provide different program guides displaying different service listings in correspondingly different regions, comprising the steps of:

forming ancillary information including,

(a) channel mapping information enabling a user of said decoding apparatus to select between different groups of broadcast services collated by area, and

(b) data for collating program guide information associated with said broadcast services by scheduled time of broadcast, and

forming linking information associating programs with said broadcast services; and

incorporating said ancillary information and said linking information into packetized data for output to a transmission channel.

19. A method according to claim 18, wherein

said area comprises at least one of (a) a geographic area, (b) an area served by a satellite, terrestrial, or cable broadcaster, and (c) a market area of a service provider.

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20. A method according to claim 18, wherein  
said channel mapping information comprises at least one of (a) a channel information map associating particular broadcast channels with particular areas, and (b) a service information map associating particular services with particular areas.

21. A method according to claim 18, wherein  
said channel mapping information associates particular broadcast channels with a region identification designation.

22. A method according to claim 21, wherein  
said region identification designation comprises at least one of (a) a zip code, (b) a telephone area code, and (c) another region identification code.

23. A method according to claim 18, including the step of  
forming said ancillary information into tables partitioned based on area and scheduled broadcast time.

24. A method according to claim 18, wherein  
said ancillary information includes an object associated with said program guide information.

25. A method according to claim 24, wherein  
said object comprises at least one of (a) a video segment, (b) an audio segment, (c) text, (d) an icon representing a user selectable item for display, (e) an HTML or SGML document (f) a menu of selectable items, (g) an image window for presentation within an encompassing image, and (h) an image window for initiating a multimedia function.

26. A method according to claim 18, including the step of  
forming ancillary information partitioned into tables and including data for collating objects and said tables, and  
including region identification designations for associating objects with regions that are different to table regions.

AMENDED SHEET

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27. A method according to claim 18, including the step of forming said ancillary information to include information associating a particular area with at least one particular decoder for decoding said ancillary information.

28. A method according to claim 27, wherein said particular decoder is associated with said particular area using a unique decoder identification code.

29. A method according to claim 27, including the step of dynamically updating said information associating a particular area with at least one particular decoder to associate a different area with said particular decoder.

30. A method according to claim 18, wherein said channel mapping information is formed in accordance with MPEG protocol and uses at least one data field selected from, (a) a table\_id\_extension field, (b) a carouselId field, and (c) a User defined private data field.

31. A method for decoding packetized program information from a first source to provide a program guide, comprising the steps of:

acquiring ancillary and program guide information in said packetized program information, said ancillary information including,

(a) channel mapping information enabling a user of said decoding apparatus to select between different groups of broadcast services collated by area, and

(b) data for collating program guide information associated with said broadcast services by scheduled time of broadcast, and

collating said program guide information associated with said broadcast services using said ancillary information; and

processing said collated program guide information for display.

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32. A method for decoding packetized program information from a first source to provide a program guide, comprising the steps of:

acquiring ancillary and program guide information in said packetized program information, said ancillary information including,

(a) channel mapping information enabling a user of said decoding apparatus to select between different groups of broadcast services collated by area, and

(b) data for collating program guide information associated with said broadcast services by scheduled time of broadcast, and

collating program guide information in response to a User selection input to provide a program guide selected from at least two available program guides associated with different areas; and

processing said collated program guide information for display.



## PATENT COOPERATION TREATY

## PCT

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>RCA 88914</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/US 99/ 03513</b>	International filing date (day/month/year) <b>18/02/1999</b>	Priority date (day/month/year) <b>20/02/1998</b>
International Patent Classification (IPC) or national classification and IPC <b>H04N7/16</b>		
Applicant <b>THOMSON LICENSING S.A. et al.</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This **REPORT** consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consists of a total of 7 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand <b>11/08/1999</b>	Date of completion of this report <b>13. 06. 00</b>
Name and mailing address of the IPEA/  European Patent Office D-80298 Munich Tel. (+49-89) 2399-0, Tx: 523656 epmu d Fax: (+49-89) 2399-4465	Authorized officer <i>J. Eriksson</i> 

Form PCT/IPEA/409 (cover sheet) (July 1998)

(06/06/2000)

2399-2432

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/US99/03513

**I. Basis of the report**

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

**Description, pages:**

1-23 as originally filed

**Claims, No.:**

1-32 as received on 21/02/2000 with letter of 18/02/2000

**Drawings, sheets:**

1/11-11/11 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**International application No. **PCT/US99/03513****V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Yes:	Claims	3,4,7-12,14-30,32
	No:	Claims	1,2,5,6,13,31
Inventive step (IS)	Yes:	Claims	
	No:	Claims	3,4,7-12,14-30,32
Industrial applicability (IA)	Yes:	Claims	1-32
	No:	Claims	

**2. Citations and explanations****see separate sheet****VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

**see separate sheet**

**INTERNATIONAL PRELIMINARY**

International application No. PCT/US99/03513

**EXAMINATION REPORT - SEPARATE SHEET**

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**To section V:**

With regard to claim 1 the document WO-A-96 41471 (hereinafter referred to as D1) discloses a system for generating a program guide only containing schedule information corresponding to the viewer's own service environment. The system includes (see figure 2 and corresponding portions of the description on pages 5 and 6) a processor for acquiring program guide and ancillary information (although not explicitly mentioned it is evident that such a processor is present in the set top box 52), a data collator for collating program guide information using the ancillary information (this is evident from page 6, first paragraph) and a display processor (see page 5, line 2) for processing the program guide information for display. The ancillary information of the program guide data include data for collating services by area (group addresses, see page 6, first paragraph) and data for collating program guide information by scheduled time of broadcast (this is an inherent feature of any program guide when the programs of different channels are displayed over a time axis). Hence all features of claim 1 can be identified in D1.

Feature (a) of claim 1 states that the channel mapping information enables a user to select between different groups of broadcast services collated by area. This feature is merely a characteristic of the received ancillary information. With regard to the claimed decoding apparatus this information states nothing else than that the apparatus is capable of processing information. It is nowhere mentioned in the claim that the decoding apparatus itself is adapted so that a selection of program guide information can be made by a user. Therefore, no difference in substance can be seen between the claimed subject-matter and the disclosure of D1. Therefore, the fact that D1 the selection is made a priori by sending a set of group numbers corresponding to all relevant groups to each customer is irrelevant for the question of novelty.

Claim 31 corresponds to claim 1 in terms of a method. Therefore, the above objections against claim 1 also hold for claim 31 for the same reasons.

Claim 32 differs from claim 31 in that program guide information is collated in response to a user selection input and selected from at least two available program guides associated with different areas. In D1 there is a slightly different approach in that all program guide information available nationwide is sent to all set-top boxes (or to a cable headend, see page 7, last paragraph) where the relevant information is filtered.

**INTERNATIONAL PRELIMINARY**

International application No. PCT/US99/03513

**EXAMINATION REPORT - SEPARATE SHEET**

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Hence a set-top box receives program guide information associated with different areas. At this point no difference can be recognized between "at least two available program guides associated with different areas" and "program schedule data in the national feed" (D1, page 6, lines 7-8) which inherently includes the information of all program guides relevant for the covered areas. Selection in response to a user selection input is a common measure which does not add anything inventive.

Claim 18 is directed to a method for forming suitable program guide information. Since the receiving part is already known from D1 a skilled person, being aware that encoding and decoding of a signal are mutually reverse operations would inevitably take care that the necessary auxiliary data (in D1: group information) are incorporated in the program guide information. The fact that they are in the form of packetized data is common art and does not add anything inventive.

The additional features of claims 2, 5, 6, 13, 19, 21 and 22 are also known from D1, see passages cited above. The additional features of claims 3, 4, 7-12, 14-17, 20 and 22-30 are generally known in the art or relate to minor design details which do not exceed the normal competence of a skilled person.

There is no objection concerning industrial applicability (Article 33(4) PCT).

**To section VII:**

Reference signs in parentheses should have been inserted in the claims to increase their intelligibility, Rule 6.2(b) PCT. This applies to both the preamble and characterising portion.

To meet the requirements of Rule 5.1(a)(ii) PCT, the document D1 mentioned above should have been identified in the description and the relevant background art disclosed therein should have been briefly discussed.

## PATENT COOPERATION TREATY

RECEIVED

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PCT

From the INTERNATIONAL BUREAU

To:

MAR 10 2000

TRIPOLI, Joseph, S.  
Thomson Multimedia Licensing  
Incorporated  
P.O. Box 5312  
Princeton, NJ 08540  
ÉTATS-UNIS D'AMÉRIQUE

NOTIFICATION OF THE RECORDING  
OF A CHANGE

(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

Date of mailing (day/month/year) 28 February 2000 (28.02.00)	<b>IMPORTANT NOTIFICATION</b>
Applicant's or agent's file reference RCA 88914	
International application No. PCT/US99/03513	International filing date (day/month/year) 18 February 1999 (18.02.99)

1. The following indications appeared on record concerning:		
<input checked="" type="checkbox"/> the applicant	<input type="checkbox"/> the inventor	<input type="checkbox"/> the agent <input type="checkbox"/> the common representative
Name and Address THOMSON CONSUMER ELECTRONICS, INC. 10330 North Meridian Street Indianapolis, IN 46290 United States of America	State of Nationality US	State of Residence US
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	
2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:		
<input checked="" type="checkbox"/> the person	<input checked="" type="checkbox"/> the name	<input checked="" type="checkbox"/> the address <input type="checkbox"/> the nationality <input type="checkbox"/> the residence
Name and Address THOMSON LICENSING S.A. 46, quai A. Le Galo F-92648 Boulogne Cedex France	State of Nationality US	State of Residence US
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	
3. Further observations, if necessary:		
4. A copy of this notification has been sent to:		
<input checked="" type="checkbox"/> the receiving Office	<input type="checkbox"/> the designated Offices concerned	
<input type="checkbox"/> the International Searching Authority	<input checked="" type="checkbox"/> the elected Offices concerned	
<input checked="" type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:	

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer C. Cupello <i>Cupello</i>
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>RCA 88914</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/US 99/ 03513</b>	International filing date (day/month/year) <b>18/02/1999</b>	(Earliest) Priority Date (day/month/year) <b>20/02/1998</b>
Applicant <b>THOMSON CONSUMER ELECTRONICS, INC. et al.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1  
☐ None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/03513

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC 6 H04N7/16

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	WO 96 41471 A (TV GUIDE ON SCREEN) 19 December 1996  see page 5, line 3 - line 31 see page 6, line 21 - line 28 ---	1,2,5,6, 13,31 4,5,7,9, 10,25 19,21, 22,27,28
A	WO 96 27982 A (KWOH DANIEL S ;LEUNG ELSIE Y (US); MANKOVITZ ROY J (US); YUEN HENR) 12 September 1996 see page 4, line 7 - line 16 see page 4, line 27 - line 36 --- -/--	1,6,22

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&amp;" document member of the same patent family

Date of the actual completion of the international search

31 May 1999

Date of mailing of the international search report

10/06/1999

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Sindic, G



## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/03513

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	HARTWIG S ET AL: "BROADCASTING AND PROCESSING OF PROGRAM GUIDES FOR DIGITAL TV" SMPTE JOURNAL, vol. 106, no. 10, 1 October 1997, pages 727-732, XP000727504 see page 728, left-hand column, paragraph 1 - paragraph 2 see page 729, right-hand column, paragraph 2 - page 730, left-hand column, paragraph 1 see figure 2 ---	1,11,15, 16,18, 30-32
Y	WO 97 41690 A (AWARD SOFTWARE INTERNATIONAL I) 6 November 1997	10
A	see page 3, line 35 - page 4, line 21 ---	18
A	WO 97 13368 A (BRIEN SEAN ANDREW O ;MILNES KENNETH ALAN (US); SCHEIN STEVEN MICHA) 10 April 1997 see page 18, line 33 - page 19, line 9 see page 26, line 32 - page 27, line 3 ---	10,18
Y	THRIFT P ET AL: "JTV - Java-enabled Television" PROCEEDINGS OF THE SPIE, vol. 3228, 4 November 1997, pages 117-122, XP002090497	7,9,10
A	see page 118, line 28 - line 35 see page 120, line 16 - page 121, line 3 ---	16,18, 24,25
Y	KUWABARA T., ET AL: "Satellite Multimedia Information Distribution Systems and Applications" PROCEEDINGS OF 19TH PACIFIC TELECOMMUNICATIONS CONFERENCE (PTC'97), 19 - 22 January 1997, pages 180-188, XP002104292 Honolulu, Hi, USA	4,5,25
A	see page 180, right-hand column, paragraph 2 - page 181, right-hand column, paragraph 1 see page 185, right-hand column, paragraph 2 -----	1,2,7,9, 13,16, 19,21

# INTERNATIONAL SEARCH REPORT

Information on patent family members

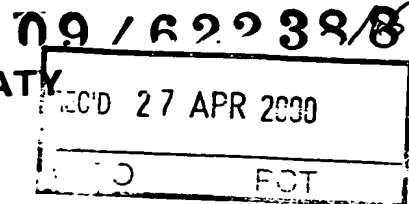
International Application No

PCT/US 99/03513

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9641471 A	19-12-1996	US 5760821 A	02-06-1998
		AU 6333696 A	30-12-1996
		BR 9609082 A	02-02-1999
		CA 2223162 A	19-12-1996
		EP 0852097 A	08-07-1998
		PL 323874 A	27-04-1998
WO 9627982 A	12-09-1996	AU 4966396 A	23-09-1996
		CA 2214762 A	12-09-1996
		CN 1186585 A	01-07-1998
		EP 0813791 A	29-12-1997
		JP 11501782 T	09-02-1999
		US 5559550 A	24-09-1996
WO 9741690 A	06-11-1997	EP 0896774 A	17-02-1999
WO 9713368 A	10-04-1997	AU 7387196 A	28-04-1997
		CA 2232003 A	10-04-1997
		CN 1200221 A	25-11-1998
		EP 0880856 A	02-12-1998
		JP 10512420 T	24-11-1998

# PATENT COOPERATION TREATY

# PCT



## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>RCA 88914</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/US99/03513</b>	International filing date (day/month/year) <b>18/02/1999</b>	Priority date (day/month/year) <b>20/02/1998</b>
International Patent Classification (IPC) or national classification and IPC <b>H04N7/16</b>		
Applicant <b>THOMSON LICENSING S.A. et al.</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 5 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand  <b>11/08/1999</b>	Date of completion of this report  <b>20.04.2000</b>
Name and mailing address of the international preliminary examining authority:   <b>European Patent Office</b> <b>D-80298 Munich</b> <b>Tel. +49 89 2399 - 0 Tx: 523656 epmu d</b> <b>Fax: +49 89 2399 - 4465</b>	Authorized officer  <b>Noll, B</b>  Telephone No. <b>+49 89 2399 8700</b> 

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/US99/03513

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**I. Basis of the report**

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

**Description, pages:**

1-23 as originally filed

**Claims, No.:**

1-30 as originally filed

**Drawings, sheets:**

1/11-11/11 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/US99/03513

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes:	Claims	3,4,7-12,14-30,32
	No:	Claims	1,2,5,6,13,31
Inventive step (IS)	Yes:	Claims	
	No:	Claims	3,4,7-12,14-30,32
Industrial applicability (IA)	Yes:	Claims	1-32
	No:	Claims	

**2. Citations and explanations**

**see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

**see separate sheet**

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

**To section V:**

With regard to claim 1 the document WO-A-96 41471 (hereinafter referred to as D1) discloses a system for generating a program guide only containing schedule information corresponding to the viewer's own service environment. The system includes (see figure 2 and corresponding portions of the description on pages 5 and 6) a processor for acquiring program guide and ancillary information (although not explicitly mentioned it is evident that such a processor is present in the set top box 52), a data collator for collating program guide information using the ancillary information (this is evident from page 6, first paragraph) and a display processor (see page 5, line 2) for processing the program guide information for display. The ancillary information of the program guide data include data for collating services by area (group addresses, see page 6, first paragraph) and data for collating program guide information by scheduled time of broadcast (this is an inherent feature of any program guide when the programs of different channels are displayed over a time axis). Hence all features of claim 1 can be identified in D1.

Claim 31 corresponds to claim 1 in terms of a method. Therefore, the above objections against claim 1 also hold for claim 31 for the same reasons.

Claim 32 differs from claim 31 in that program guide information is collated in response to a user selection input and selected from at least two available program guides associated with different areas. In D1 there is a slightly different approach in that all program guide information available nationwide is sent to all set-top boxes (or to a cable headend, see page 7, last paragraph) where the relevant information is filtered. Hence a set-top box receives program guide information associated with different areas. At this point no difference can be recognized between "at least two available program guides associated with different areas" and "program schedule data in the national feed" (D1, page 6, lines 7-8) which inherently includes the information of all program guides relevant for the covered areas. Selection in response to a user selection input is a common measure which does not add anything inventive.

Claim 18 is directed to a method for forming suitable program guide information. Since the receiving part is already known from D1 a skilled person, being aware that encoding and decoding of a signal are mutually reverse operations would inevitably take care that the necessary auxiliary data (in D1: group information) are incorporated in the

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/US99/03513

program guide information. The fact that they are in the form of packetized data is common art and does not add anything inventive.

The additional features of claims 2, 5, 6, 13, 19, 21 and 22 are also known from D1, see passages cited above. The additional features of claims 3, 4, 7-12, 14-17, 20 and 22-30 are generally known in the art or relate to minor design details which do not exceed the normal competence of a skilled person.

There is no objection concerning industrial applicability (Article 33(4) PCT).

**To section VII:**

Reference signs in parentheses should have been inserted in the claims to increase their intelligibility, Rule 6.2(b) PCT. This applies to both the preamble and characterising portion.

To meet the requirements of Rule 5.1(a)(ii) PCT, the document D1 mentioned above should have been identified in the description and the relevant background art disclosed therein should have been briefly discussed.

**To section VIII:**

Claim 29 should be directed to a method rather than an apparatus.

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